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The Effect of Praise and Critical Feedback on the Task Performance of Young Males of Varying Levels of Adaptive Behavior

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THE EFFECT OF PRAISE AND CRITICAL FEEDBACK
ON THE TASK PERFORMANCE OF YOUNG MALES OF
VARYING LEVELS OF ADAPTIVE BEHAVIOR

A Thesis

Presented to

the Faculty of the Department of Psychology
Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

by

Michael J. Reed

December, 1981

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A human being is a part of the whole, called by us the "Universe," a part limited in time and space. He experiences himself, his thoughts, and feelings as something separated from the rest - a kind of optical delusion of his consciousness. This delusion is a kind of prison for us, restricting us to our personal desires and to affection for a few persons nearest to us. Our task must be to free ourselves from this prison by widening our circle of compassion to embrace all living creatures and the whole of nature in its beauty. Nobody is able to achieve this completely, but the striving for such achievement is in itself a part of the liberation and a foundation for inner security.

- Albert Einstein

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The effect of evaluative feedback on the simple motor performance of young males of varying levels of adaptive behavior was examined. Subjects were 50 male Caucasians (6.0 to 8.5 years of age) randomly assigned to either a praise, criticism, or control condition. Subjects participated in a motor task twice (pretest, posttest). After the first trial of the task (pretest), subjects received either positive evaluative feedback (praise), negative evaluative feedback (criticism), or were asked for biographical information (neutral). The second trial of the task immediately followed feedback. The adaptive behavior level of each subject was determined in a subsequent interview with the mother using the Adaptive Behavior Inventory for Children (ABIC). Multiple regression analysis was performed on the data with pretest score as the covariate. Only one significant effect emerged, a positive relationship between adaptive behavior and posttest performance under praise.

CHAPTER I

Introduction

In recent years adaptive behavior has become an important, though controversial, concept. Concerned with an individual's ability to effectively cope with the demands of his environment, adaptive behavior is generally defined as "the effectiveness or degree with which the individual meets the standards of personal independence and social responsibility expected of his age or cultural group." Other definitions of adaptive behavior also exist (Mercer, 1977; Nihira, 1969), but most share common elements as to what constitutes adaptive behavior. These elements include the possession of the skills and abilities necessary for (1) functioning independently in meeting basic physical needs (e.g., eating, personal hygiene, toileting), (2) participation in the community (e.g., ability to handle money, express oneself, to travel), and (3) for maintaining responsible social relationships (e.g., ability to cooperate and interact with others, to initiate and persist in purposeful activities). Finally, most definitions imply that the expectations for what is appropriate adaptive behavior varies with the age of the individual.

Morris and Coulter (1978) feel the sudden importance of adaptive behavior is a result of two social trends. First, society has come under criticism for unfairly restricting or prohibiting the participation of mentally handicapped citizens in society. The concept of "normalization" stresses the importance of providing mentally retarded citizens a lifestyle as similar as possible to normal citizens. Normalization is thus dependent upon mentally retarded citizens achieving a minimum level of independent functioning. This trend for normalization has resulted in a push for the development of a technology to provide mentally retarded citizens with the adaptive skills necessary for at least minimal independent functioning and normalization.

The second trend is reflected in federal legislation (Public Law 94-142) that requires non-biased assessment to ensure equal treatment to all children in the public schools. This non-biased assessment, in which adaptive behavior measurement is a required component, seeks to modify traditional assessment procedures by ensuring that professional judgments are based on data that do not discriminate against ethnic minorities. In this context, adaptive behavior emphasizes a child's ability to function effectively outside the school environment. Mercer (1973) feels that if a child's out-of-school adaptive behavior is evaluated, there is less likelihood of unfairly labeling a minority child as mentally handicapped.

Even though adaptive behavior has become an important concept, there is considerable disagreement concerning attempts to define and measure it. Morris and Coulter (1978) note that the general definition of adaptive behavior (Grossman, 1973) is both flexible and vague, and adaptive behavior can be almost anything an appraisal practitioner chooses. Clausen (1972), likewise, argues that adaptive behavior is too vague a concept to be considered a discrete entity. Speaking of adaptive behavior and its measurement, Baumeister and Muma (1975) state:

Upon closer analysis adaptive behavior turns out to be a rather vague and ill-defined concept, despite recent efforts to develop measurement scales for it. And it is doubtful whether any instrument can suffice in this regard. For one thing, there is no way of knowing all the contexts in which an individual will be required to function. Second, all relevant domains of adaptive behavior will not possibly be tapped by a single instrument. (p. 302)

Other difficulties related to the assessment of adaptive behavior are described by Leland (1978). He notes the ease of formulating questions which deal with the occurrence of behavior such as toileting, feeding, dressing, etc., but stresses the occurrence of other behaviors which may be associated with attempts by the individual to conduct these behaviors. Emphasizing the importance of examining these other behaviors, Leland loosely defines them as what the individual is doing "instead."

Thus, if one asks, 'Does a child feed him/herself with a spoon?' the answer may be no, but this may be only half the answer. At the same time, the child may be throwing the food, smearing it, putting his/her face

in it, or squeezing it through a fist. There are a variety of things which may be going on 'instead,' all of which represent observable discrete behaviors that demonstrate how this individual is attempting to cope with the fact that there is food in front of him/her. In many respects the 'instead' behaviors are, in terms of program planning, more important than the expected behaviors. One of the reasons that adaptive behavior measurement is basically different from IQ measurement is that it is not tied to standardized or expected behaviors, but rather is a combination of anticipated behaviors and idiosyncratic behaviors. The real measurement of this individual's adaptive behavior comes from this combination. (p. 21)

Despite the problems inherent in defining and measuring a concept such as adaptive behavior, political and social realities assure that attempts will continue. Thus, the measurement scales of adaptive behavior presently available must be examined to determine both their strengths and limitations.

One area of adaptive behavior not yet thoroughly explored is the degree to which individuals differing in adaptive behavior respond differently to social demands or in a social situation. No research to date has examined whether children possessing differing levels of adaptive behavior exhibit systematic differences in behavior in response to social demands. The purpose of this study is to determine if indeed there are systematic differences in the manner young males of differing levels of adaptive behavior react to a social situation.

The situation to be examined is the effect of positive or negative feedback on the subsequent simple motor performance of young males. Positive evaluative feedback refers

to comments of praise given for task performance. Negative evaluative feedback refers to criticism given for task performance.

Thus, this study will examine the following questions:

- (1) Does positive feedback (i.e., praise) increase, decrease, or have no effect on subsequent simple motor performance;
 - (2) Does negative feedback (i.e., criticism) increase, decrease, or have no effect on subsequent simple motor performance; and
 - (3) Does adaptive behavior predict the simple motor performance of young males after receiving praise or criticism.
- More specifically, do males of higher adaptive behavior respond differently to praise or criticism than males of lower adaptive behavior.

CHAPTER II

Literature Review

Adaptive Behavior Inventories

Two current instruments designed to measure adaptive behavior are examined in this review. One, the American Association Mental Deficiency (AAMD) Adaptive Behavior Scale - Revised (ABS) was first developed in 1969 by Nihira, Foster, Shellhaas, and Leland and was revised in 1974 (Nihira, Foster, Shellhaas, and Leland, 1974). The other, the Adaptive Behavior Inventory for Children (ABIC) is one part of a total assessment package (System of Multicultural Pluralistic Assessment) developed by Mercer (1977). Information on these two scales follow.

Bortner (1978) discusses the construction and characteristics of the ABS in his review of the test. The ABS consists of two parts. Part I measures skills and behaviors related to personal independence. Part II measures maladaptive behavior related to personality and behavior disorders.

Part I of the ABS is a product of a comprehensive review of existing rating scales in the United States and Great Britain. Items were selected on basis of (1) interrater reliability, (2) ability to discriminate among institutionalized retarded persons previously classified at differing

levels of adaptive behavior, and (3) ability to discriminate among adaptive behavior levels, when variance for intelligence was controlled. Part I is designed to evaluate an individual's skills and habits considered important to the development of personal independence in daily living. It's ten subcategories examine the skills and abilities related to such activities as eating, toileting, language and communication, and meeting domestic demands.

Part II of the scale is a product of extensive surveys of the social expectations placed upon retarded persons both in regular institutions and in the community. It is designed to provide measures of maladaptive behavior related to personality and behavior disorders. Part II contains 14 subcategories and examined behaviors such as violence and destruction, antisocial behavior, self-abusive behavior, and hyperactive tendencies.

Part I contains 66 items and Part II 44 items. All items require the rating of behavior. The scale is administered to an individual who has a thorough knowledge of the person being assessed.

Percentile norms are predicted for 11 age groups varying from 3 years to 50-69 years. They are based on approximately 4,000 mentally retarded persons in residential institutions. Interrater reliabilities for the 10 subcategories of Part I ranged from .71 to .93 with a median of .86. The reliabilities for the 14 subcategories in Part II range from .37 to .77 with a mean of .57.

The ABIC is designed to measure the child's development in social roles other than as a school learner. These roles are represented by the six scales of the ABIC: the Family, the Community, Peer Relations, Nonacademic School Roles, Earner/Consumer, and Self-Maintenance. The purpose of the ABIC is to obtain a cross-sectional view of a child's adaptive behavior at a single point in time.

In developing the ABIC, Mercer obtained data by interviewing the parents of 2,085 children (standardization sample). The initial inventory of items consisted of 252 questions derived from a variety of sources. These items were placed tentatively according to age level based on information obtained from 1,259 questionnaires. The final scale consists of 242 items. The first 35 questions are asked of every child and are unrelated to the age of the child. The remaining were placed at the age level (one year levels, five through eleven years of age) the behavior was first found to be occurring. In the ABIC interview, the first 35 questions and generally the questions for a child of his/her respective age are asked of the mother. Typical questions for an eight year old male are as follows:

When (name) goes to the movies, call games, or other activities like these in the community, does he go ...
(2) Alone or with other children his own age. (1)
With older children or adults. (0) Doesn't he go to such activities at all?

How often does (name) make plans with his friends about what they will do after school or on a weekend? (0) Never. (1) Some of the time. (2) All of the time.

Each question allows for scoring three levels of response.

A latent response in which the behavior has not been demonstrated (scored 0), an emergent response in which the behavior is performed occasionally and/or under supervision (scored 1), and a mastered response in which the behavior is performed regularly and competently without supervision (scored 2).

The ABIC inventory contains a number of veracity questions at each age level. These questions concern behaviors unlikely to be performed by a child of that respective age. If a criterion number of questions are answered with a mastered response, the ABIC scale scores are considered invalid. The same is also true when a criterion number of questions are answered with a "don't know" or the child has had "no opportunity" to perform the questioned behavior.

The scale items are asked of the mother of the child. The raw scores obtained are converted to standard scores with a mean of 50 and a standard deviation of 15. Reliability coefficients for the scale scores of the ABIC were calculated at each age level five through eleven years of age, inclusive for the entire sample and separately for each ethnic group (White, Black, and Hispanic). They were calculated by the split-half procedure, odd versus even items and corrected for the length of the test using the Spearman-Brown formula.

Reliability coefficients for the ABIC subscales were found to be .75 or above in 121 of 126 possible instances. Inter-correlations of the ABIC subscales were found to be .65 or higher. One total score called the Average Scale Score (the average of the six subscale scores) is available from the ABIC. Reliability coefficients for ABIC Average Scale Score was found to be .95 or above at each age level for each ethnic group. The reliability coefficients for the Average Scale Score were calculated from the formula for reliability of a composite group of tests (Guilford, 1954, p. 393). For the White, Black, and Hispanic groups combined, the standard error of measurement of the Average Scale Score ranged from 1.95 to 2.59 across age levels.

Research demonstrating the applicability of adaptive behavior instruments to predict differences in behavior is limited to one study which examined whether groups responding adaptively or nonadaptively to an altered environmental situation differed in their adaptive behavior levels. In this study, Scheel and Galbraith (1980) examined the relationship between an individual's score on the Adaptive Behavior Scale (ABS) and the ability to adapt to visual-motor rearrangement. Subjects were 31 male and 4 female institutionalized retarded persons. In this experiment subjects were given glasses with an optical prism that displaced the visual field. The subjects were then guided through a room with various obstacles which allowed them an opportunity to adapt to the displaced visual view. They were then instructed

to point to certain target objects. The degree to which subjects compensated for the visual field displacement determined whether the subjects were classified as adaptors or nonadaptors.

Scheel and Galbraith found that the adaptor group had a significantly higher ABS mean score than the nonadaptor group. This difference reflects higher mean scores for the adaptor group on two factors of the ABS (Personal Self-Sufficiency and Community Self-Sufficiency), both of which possess many behavioral items requiring some degree of sensorimotor processing. No differences were found between the two groups for the third factor of the ABS (Personal-Social Responsibility), the items of which reflect few sensorimotor processes.

No study, to date, has determined whether children from the general population possessing differing levels of adaptive behavior will respond differently to social or environmental demands. In this study, young males (6.0 to 8.5 years of age) recruited from public schools will be used as subjects to examine this question. The ABS is not an appropriate instrument to measure adaptive behavior in this case. The ABS has not been evaluated for its appropriateness with public school children, nor does it provide a summative score reflecting an individual's general level of adaptive behavior. For the purposes of this study the ABIC is the preferred instrument. As previously mentioned, the ABIC provides a total score called the Average Scale Score, is normed referenced, and was standardized on the general

population. The Average Scale Score obtained from the ABIC will be used in this study as the measure of the child's adaptive behavior.

Evaluative Feedback

As previously noted, no research has examined the relationship between adaptive behavior and the effects of evaluative feedback (i.e., praise and criticism). This review will thus focus on those studies which share common characteristics with this study. Criteria for including studies in this review are (1) those utilizing simple repetitive motor tasks rather than a skill-motor or learning task, (2) those using generalized praise or criticism rather than contingent praise or criticism, and (3) those using school-aged children as the subject population. The first series of studies examines the effects of periodic praise and criticism on simple motor performance. Emphasis will be placed on the findings for younger children (grade 2 and below).

Periodic Feedback for Simple Motor Tasks

The effects of praise and criticism on subjects have often been examined by using simple motor tasks. Stevenson and Snyder (1960) examined the effect of incentives (i.e., praise and criticism) on the simple motor performance of 90 mentally retarded males and females with a mean mental age of 6.5 years. Subjects were involved in two "games" which required them to drop marbles for a period of 7 minutes into

designated openings in a container. For Game 1, subjects were placed in either a reward, punishment, or neutral condition. Those subjects in the reward condition received comments of praise such as "You're really good at this," or "That's good." Subjects in the punishment condition received critical comments such as "You're really bad at this," or "That's no good." These comments were given at 30 second intervals throughout each 7-minute period for performing the task. Subjects in the neutral condition received no comments. For Game 2, each group was divided into three subgroups with subjects assigned to receive either praise, criticism, or no comments. The procedure applied in Game 1 was repeated in Game 2.

For Game 1, the highest average number of marbles dropped occurred in the neutral condition. This was followed by the praise group and lastly by the punishment group. For those subjects in the neutral condition in Game 1 the same order effects were found for Game 2. The neutral group performed highest followed by the praise and criticism groups. Subjects in the neutral condition in both Game 1 and Game 2 were found to drop the highest number of marbles of any group. The subjects who had received praise or criticism in Game 1 were found in Game 2 to drop the greatest number of marbles under the praise condition. They were followed by the neutral and punishment groups. Punishment was found to depress performance for all groups in Game 2. Praise was found to increase performance for all groups in Game 2.

In Game 2, the higher performance of the neutral group over the praise group may have been a result of praise comments interfering with this group's rate of response. In response to experimenter's comments subjects often attempted to engage in conversation with the experimenter. That subjects in the neutral condition in both Game 1 and Game 2 dropped the highest number of marbles was felt by the authors to be an attempt by the subjects to gain approval from the experimenter. The failure of the experimenter to respond to subjects' performance was seen as motivating the subjects to perform better. In summary, praise was found to facilitate and criticism to depress the simple motor performance of mentally retarded individuals. The findings for those subjects in the neutral condition in Game 1 or in both Game 1 and Game 2 indicate the potential effect of the presence of an experimenter on subjects.

This latter finding as well as the effects of praise and criticism were examined in the following study which used both normal and mentally retarded children as subjects.

In this study (Stevenson and Cruse, 1961), the effectiveness of social reinforcement was examined over a five day period. Subjects were 36 institutionalized children and 72 normal children. The institutionalized children had a mean chronological age of 15.0 years and a mean mental age of 6.1 years. The normal children were 36 6th and 7th graders with a mean chronological age of 12.4 years and 36 kindergarten children with a mean chronological age of 5.2 years.

Subjects were assigned into either a reward, punishment, attentive, or absent condition. In the reward condition comments of praise (e.g., "You are doing very well.") were given. In the punishment condition critical comments (e.g., "That's not very good.") were made. The attentive condition had the experimenter merely watch the child with no comments being made. In the absent condition the experimenter left the immediate area of the child.

The task required subjects to place a large number of marbles of two colors into their appropriate opening in a container. In the punishment and reward conditions evaluative comments were made after every 15th response. Subjects performed the task once each day for a maximum of 30 minutes for five consecutive days. Subjects could leave the task any day after their 15th response.

Stevenson and Cruse found for the mentally retarded subjects a consistent decrease in the number of marbles inserted from reward, to attentive, to absent, and finally punishment. For the younger normal subjects (kindergarten children), the highest number of marbles inserted occurred in the reward condition followed by absent, attentive, and punishment conditions. For the older normal subjects (6th and 7th graders), the highest number of marbles inserted occurred in the punishment condition followed by absent, reward, and attentive conditions.

The finding that criticism produced the highest rate of response for older normal subjects appears to be a result of embarrassment. Older subjects in all conditions except punishment showed no interest in the task. In this condition when criticism occurred, the subjects blushed, looked at the experimenter with perplexity, and then began to work vigorously at the task.

The results for the mentally retarded subjects and younger normal subjects were similar. For both groups, praise resulted in the highest number of marbles being inserted and criticism the lowest. These groups outperformed the older normal subjects in the reward and attentive conditions, suggesting that older subjects are less dependent upon adults for social reinforcement than younger normal subjects or the mentally retarded.

The findings of this study for the mentally retarded subjects are consistent with those obtained in the previous study (Stevenson and Snyder, 1960). In both studies not only was praise found to facilitate task performance, but again attention was demonstrated to have a positive effect. Finally, results for punishment was also consistent, with punishment depressing performance in the previous study and resulting in the poorest performance for any group in this study.

Importantly, this study indicates that the findings for the effects of praise and criticism for the mentally retarded are applicable with younger normal subjects. For both groups,

praise was found to facilitate and criticism to have a negative effect on simple motor performance.

The following study (Hill and Moley, 1969) examined not only the effects of social reinforcement (i.e., praise) but the effects of introducing a task as a "game" or "test." Hill and Moley examined the effects of reinforcement and task instruction on the marble dropping performance of 40 males and 40 females from the 1st, 2nd, 4th, and 5th grades. The marble dropping task required subjects to drop marbles one at a time into any of six openings in a large bin. Prior to the task subjects were told either they were going to play a "game" or take a "test." During the first minute of the task the experimenter was nonresponsive to the subject (baseline) and during the subsequent 5 minutes of the task delivered either praise (e.g., "You're doing well," "Very good.") on a FI 20 second schedule or continued to be non-responsive (neutral). The difference between the scores obtained during baseline and the scores obtained during each minute of praise or nonresponse (difference scores) was analyzed.

For the older subjects (4th and 5th graders) no main effect was found for reinforcement or task instruction, though a significant sex difference was found. Older males were found to obtain significantly higher difference scores than older females. A significant triple interaction was found for older subjects of sex by task instruction by reinforcement condition. For males, the difference scores obtained under game instruction were not affected by praise

or neutral conditions. For females under game instruction, higher difference scores were found under neutral than praise condition. Under test instruction, males' difference scores were higher under neutral than praise, while females' difference scores were higher in praise than neutral.

The difference scores of subjects from the 1st and 2nd grades were not found to be affected by sex or task instruction, but were affected by reinforcement condition. Males and females receiving praise obtained higher difference scores than subjects in the neutral condition. Subjects receiving praise demonstrated an increase in performance for each succeeding minute, with difference scores increasing. The performance of subjects in the neutral condition was found to decrease for each succeeding minute.

The findings for the older subjects may be a result of the differences in response that males and females have toward female experimenters. The authors cite research which suggests that subjects are more concerned with feedback when it comes from an experimenter of the opposite sex. In this study, the importance of this feedback may have been enhanced or lessened as a function of the task being viewed as a game or test by the subjects. This explanation will not be elaborated further, as this effect was not found for the younger subjects and thus would not be germane to this literature review.

For the younger subjects no sex differences were found which might have reflected differences in response to the sex of the experimenter, nor were there differences found as

a result of the task being introduced as a game or test. As in the previous study (Stevenson and Cruse, 1961), praise was found to facilitate task performance.

Hill and Moley (1969) did not examine the effect of criticism as compared to the effect of praise or neutral conditions. Spear and Armstrong (1978) using procedures similar to Hill and Moley's study compared the effects of criticism with those of praise. This study further extended their work by using a more complex task, requiring subjects to make some discriminations. In addition, Spear and Armstrong examined the use of "performance expectancies" to modify the task performance of subjects. "Performance expectancies" refers to peer comparisons, that is, statements to the child about how he is expected to perform on a task in comparison to his peers.

Spear and Armstrong (1978) used a marble-sorting task to examine the effects of performance expectancies and social reinforcement (i.e., praise and criticism) on the simple motor performance of 288 children. Subjects were 72 males and 72 females from kindergarten (younger children) and 72 males and 72 females from 4th and 5th grades (older children).

Prior to the task subjects were given either positive, negative, or no peer comparisons. Positive peer comparisons consisted of subjects being told that they were expected to

do better than their peers. Negative peer comparisons consisted of subjects being told they were expected to do worse than their peers. After the peer comparisons were made, the subjects began the task.

The task required the subjects to drop marbles of five colors into their appropriate openings in a large bin. The initial minute of performance was used to establish baseline. In the following four minutes, praise (e.g., "You play this game well," "You're good at this.") or criticism (e.g., "You're not playing this game very well," "You could do better.") were delivered on a FI 20 second schedule. The difference between the scores obtained during baseline and during each minute of the experimental period (difference scores) was analyzed.

For the older subjects no main effects for reinforcement or performance expectancies were found, but significant interactions between these variables did occur. Older children who were praised, and who had received negative peer comparisons, obtained the highest difference scores of any group receiving praise. They were followed by the group who had received positive peer comparisons and lastly by those who received no peer comparisons. When criticized, older children who had received positive peer comparisons obtained the highest difference scores of any group receiving criticism. They were followed by the group who had received no peer comparisons and lastly by those who had received negative peer comparisons.

Younger subjects (kindergarten children) were not affected by peer comparisons, but were affected by praise and criticism. Younger subjects receiving criticism obtained lower difference scores than those receiving praise.

For older children peer comparisons were found to be most effective in increasing rate change when the comparison was discrepant from the type of social reinforcement applied, thus suggesting that with older subjects peer comparison might be useful for simple tasks when it is paired with social reinforcement contrary to expectations.

The findings for the younger children are again of most importance here. In this study praise resulted in higher difference scores than criticism regardless of peer comparison, an indication that the simple motor performance of young children is affected by praise and criticism from an adult but not by peer comparisons. In addition, the results of praise and criticism appear to be applicable for simple motor tasks which require subjects to make some discriminations. This study did not utilize a control group which makes it impossible to determine the effects of praise and criticism relative to a control group.

The last study of this section (Kelly and Stephens, 1964) not only examined the effects of praise, criticism, and a neutral condition on simple motor performance, but also whether the effects of praise, criticism, or no comments was affected by reinforcement that preceded it. In addition, the praise

and criticism used in this study was different from previous studies (Stevenson and Snyder, 1960; Stevenson and Cruse, 1961; and Hill and Moley, 1969) as subjects were told whether their performance was "fast" or "slow."

Kelly and Stephens used a marble-dropping game to assess the effects of praise and criticism on 180 kindergarten children after exposure to reinforcement on a "prelearning task." In the "prelearning experience" children participated in a 5-minute session in which they were asked to draw. In this session subjects received either praise (e.g., "That's good," "Fine."), criticism (e.g., "Not too good," "That's a poor job."), or praise and critical comments alternated. Statements occurred at 30 second intervals throughout the 5-minute prelearning period. After this 5-minute period, subjects were further assigned to one of three groups receiving either praise, criticism, or no comments during the performance of a marble-dropping task. This task required subjects to drop marbles, one at a time, into one of two holes in a bin. The subjects were given praise or criticism at 30-second intervals or no comments over a 5-minute acquisition period. The praise condition included such statements as "That's fast, good," while the punishment condition included such statements as "That's slow, not too good." Following the 5-minute acquisition period, there was a 6-minute period in which no comments were made.

The prelearning experience did not produce significant differences in the rate of response within the praise, criticism, or neutral groups. None of the possible interactions concerning these conditions and the prelearning variable were significant. Groups receiving criticism had the highest rate of response over each minute of the acquisition trial followed by groups receiving praise. The no reinforcement (no comment) groups had the lowest rate of response.

In the extinction phase the prelearning experience failed to produce any significant differences, and no significant interactions with the reinforcement conditions were found. In the extinction phase, the rate of response for the criticism groups continued at a high level with no decrease. The response rate of the praise and no reinforcement groups decreased in the extinction phase.

The most significant finding in this study is the high rate of response of subjects in the criticism condition. This finding is not consistent with those obtained in other studies (Stevenson and Cruse, 1961; Spear and Armstrong, 1978). The authors suggest that the high response rate of the criticism group was a result of effort by subjects to avoid criticism. This effect had not been found in the studies referenced above. An alternative explanation is that the effect occurred as a result of the type of feedback given to the subjects. In previous studies (Stevenson and Snyder, 1960; Stevenson and Cruse, 1961; Hill and Moley, 1969; and Spear and Armstrong, 1978) praise or criticism has

consisted of simple statements (e.g., "Fine," "That's good," "That's bad," "That's not too good.") which have given subjects an evaluation of their performance, but little other information. The praise and criticism used by Kelly and Stephens not only said "good" or "not too good," but also "That's slow," or "That's fast." This additional information informed the criticism group that performance was poor because of lack of speed and thus by increasing speed criticism might be avoided. The praise group learned their performance was satisfactory if they maintained or increased their level of response. Thus, it is suggested that the discrepant finding for criticism, revealed in this study, is a result of additional information contained in the feedback which gave the subject direction (i.e., increase speed) as to how to avoid criticism.

The other findings provide additional information. That the criticism group maintained a high level of response in the extinction phase suggests that criticism may be more effective than praise in maintaining performance behavior. That previous feedback did not effect the subject's response to subsequent feedback indicates that the effects of feedback with younger children may be immediate. Support for this finding is contained in the Stevenson and Snyder (1960) study which found praise to facilitate and criticism to hinder task performance regardless of the incentive condition that had been employed previously.

To summarize these studies dealing with the use of periodic praise or criticism on simple motor tasks, the results need to be separated into those for younger children (grade 2 and below) and those for older children (grades 4, 5, 6, and 7). As this study will examine young males, emphasis will be placed accordingly.

The findings for the older children are sparse and variable. One study (Stevenson and Cruse, 1961) found older subjects to increase simple motor performance under criticism, while others (Hill and Moley, 1969; Spear and Armstrong, 1978) found the effects of praise or criticism to interact with such variables as type of task instruction and peer expectancies. In general, for older children the effects of praise and criticism on simple motor performance seem to be influenced by a variety of variables and, thus, appears to be extremely complex.

Studies with younger children (grade 2 and below) have generally found praise to have a greater facilitating effect on simple motor performance than either criticism or no comments. This effect has been found with both marble-dropping tasks and more complex marble-sorting tasks. The effects of praise and criticism on younger children appear to be strong and consistent as neither task instruction, peer expectancy, nor prior feedback experience were found to interact with evaluative feedback. The relative strength of social reinforcement for younger children was further indicated in one study (Stevenson and Cruse, 1961) which found

younger subjects to outperform older subjects under certain conditions. Only one study (Kelly and Stephens, 1961) found results not consistent with these findings. This study found children performing at a higher rate under criticism than praise. As previously discussed, the nature of the feedback was different from that used in previous studies which may have led to this discrepant finding.

Studies thus far reviewed have examined the effects of praise and criticism given at regular intervals during a task. This approach resulted in frequent comments being made during a child's task performance. The frequency of evaluative feedback found in these studies is not felt by the author to reflect how feedback is typically given. More typical is for individuals to receive feedback after completion of a task.

This study thus will examine the effects of evaluative feedback given for performance on a simple motor task on the subject's subsequent performance. Further, the evaluative feedback to be given is not a simple comment, but rather a series of statements concerning the subject's performance and the experimenter's disappointment or pleasure concerning performance. The studies to be reviewed in the following section used this type of evaluative feedback and examined its effects on subsequent discrimination performance. Studies of this type are limited, and studies which have used only older children as subjects will be examined.

Feedback for Discrimination Tasks

Kennedy, Turner, and Lindner (1962) examined the effects of evaluative feedback on the discrimination performance of 96 11th and 12th graders of high (IQ 124-150) and average (IQ 95-116) intelligence. Each subject was given two trials on a 32 card discrimination task. The cards were individually displayed on a screen with each card containing four patterns. The task for the subjects was to identify as quickly as possible the one pattern of four which was different from the remaining and to push the appropriate key which recorded their response time. After the first trial and prior to the second trial, subjects received either positive evaluative feedback (i.e., praise), negative evaluative feedback (i.e., criticism), or were asked for biographical information (control). Trial 2 followed these conditions, the cards being presented in the same order as in Trial 1.

They found for the subjects of high intelligence no difference in mean reaction time across the three conditions. For subjects of average intelligence, negative feedback had a variable but generally strong inhibiting effect on performance. The mean reaction time obtained for this group under criticism was significantly slower than praise or control groups.

This study found for subjects of average intelligence a significant negative effect for criticism, but no effect for praise when compared to a control group. Subjects of high intelligence were not affected by praise or criticism.

Whether these results for 11th and 12th graders were applicable with younger subjects was examined in a later study (Willcutt and Kennedy, 1963).

Willcutt and Kennedy (1963) examined the effects of evaluative comments (praise and criticism) and a control group on the discrimination performance of 90 4th grade students divided by low (IQ 71-90), medium (IQ 91-110) or high (IQ 111-130) intelligence. The procedure applied in the previous study (Kennedy et. al., 1962) was repeated though only a 16-card task was used.

They found mean reaction time did not differ between the praise, criticism, or neutral groups on the first trial. However, the groups did differ in two aspects on the second trial. Praise was found to decrease variability of reaction time and shorten mean reaction, while criticism between trials tended to increase variability of reaction time and lengthen mean reaction. The mean reaction time of the control group decreased from Trial 1 to Trial 2 though not significantly. There were no significant effects found for intelligence nor interactions between intelligence and feedback conditions.

These results indicate that the discrimination performance of 4th graders is affected by both praise and criticism regardless of the intelligence level of the subject. This study in conjunction with the previous study (Kennedy et. al., 1962) suggests that younger children regardless of intelligence level are more sensitive to evaluative feedback than older subjects. Whether the findings for 4th graders were

applicable for even younger children was examined in a later study.

Kennedy and Willcutt (1965) examined the effectiveness of evaluative feedback (praise and criticism) and a control group on the discrimination performance of 720 children as a function of race (White, Negro), grade (2, 4, 7, and 10), intelligence (high, medium, low), and sex.

The same procedure employed in the previous studies (Kennedy et. al., 1962; Willcutt and Kennedy, 1963) was used. The results for the White sample found a significant interaction between verbal incentive and trial. Under praise and control conditions subjects showed a decrease in reaction time from Trial 1 to Trial 2. Under criticism the reaction time of the subjects was found to increase from Trial 1 to Trial 2.

A significant interaction for the White sample was also found between incentive, trial, and grade. The mean reaction time of 7th and 10th graders increased from Trial 1 to Trial 2 under criticism while the mean reaction time of 2nd graders from Trial 1 to Trial 2 was unaffected by criticism.

An interaction of incentive by trial by grade by intelligence was also found. No consistent pattern of differences among the three intellectual groups was found for the 2nd and 4th graders, but for 7th and 10th graders subjects of lower and medium intelligence were found to be the persons most adversely affected by criticism.

The findings for the Negro sample were the same as for the Whites, except that intelligence was not found to be a significant factor for any group.

This study generally supports the findings of the previous studies (Kennedy et. al., 1962; Willcutt and Kennedy, 1963). For older subjects (grade 4 and above), praise has a facilitating effect on reaction time while criticism has an inhibiting effect on reaction time. At some age levels for older subjects, effects of evaluative feedback were found to interact with the intelligence level of the subjects. The findings for the 2nd graders are of the most relevance here and the results are unexpected. While praise was found to have its greatest facilitating effect on the performance of 2nd and 4th graders, 2nd graders were not found to be affected by criticism--a rather surprising result in view of the research (Stevenson and Cruse, 1961; Spear and Armstrong, 1978) which suggests that younger children are sensitive to both praise and criticism.

In summary, evaluative feedback consisting of more than a statement of praise or criticism does affect subject's subsequent performance on discrimination tasks. As with simple motor tasks, the effects of evaluative feedback with older subjects (grades 4 and above) are more complex, as intelligence was found to interact with praise and criticism at some grade levels. The findings for 2nd graders are limited to one study (Kennedy and Willcutt, 1965), but here praise was found to facilitate task performance while criticism was

found to have no effect on discrimination performance. Other tasks have been utilized to examine the effects of evaluative feedback on subject's subsequent performance. The evaluative feedback used in these studies generally consisted of a simple statement of praise or criticism. These studies will be examined in the following section.

Feedback for Other Tasks

Fish and White (1978) examined the effects of verbal reinforcement upon task performance taking into account the subject's sex, interest in the task, and the usable performance feedback (UPF) inherent in the task. High UPF tasks are those which subjects can determine from the task the effectiveness of their performance; in contrast, low UPF tasks are those which subjects cannot determine from the task their performance effectiveness.

The study was conducted in 18 5th-grade classes. Students within each class were randomly selected to receive one of six tasks. Tasks were divided into three levels of interest with two tasks in each. At each level of interest, one task had a high UPF and the other a low UPF. In the pretest, subjects within each class were given 5 minutes to perform their respective task. The experimenter collected and examined these pretests, then delivered either an approval (i.e., praise), disapproval (i.e., criticism), or a neutral statement to the entire class. Subjects were then given an equivalent form of the pretest. The dependent variables examined were the number of items correct and the number completed.

For accuracy on the posttest no main effects were found for sex of subject, task interest, UPF, or verbal condition. One significant interaction was found between interest and UPF. The greatest increase in the number of items correct occurred when high interest tasks were paired with high UPF tasks and when low interest tasks were paired with low UPF tasks.

For the number of items completed on the posttest, a main effect was found for sex with females outperforming males. A significant effect for UPF was found with subjects in low UPF tasks completing more items than subjects in high UPF tasks. Significant interactions were found for interest by reinforcement and for UPF by reinforcement. The greatest increases in the number of items completed occurred when medium and low interest tasks were coupled with praise and high interest tasks with criticism. The UPF by reinforcement interaction found the greatest number of items completed when high UPF tasks were paired with verbal approval. Performance in low UPF tasks was similar under all reinforcement conditions.

The failure to find main effects for approval of disapproval for posttest performance accuracy or speed was possibly due to the manner in which reinforcement was given. The administration of evaluative feedback to the entire class rather than individually may have diminished the impact of the statements.

This study, nevertheless, suggests that the effect of praise and criticism must be considered relative to aspects of the task. UPF was found to interact with verbal approval and disapproval as well as with subject's interest in the task. As has been shown previously (Hill and Moley, 1969; Spear and Armstrong, 1978; Kennedy et. al., 1962; and Willcutt and Kennedy, 1963) the effects of evaluative feedback for children of this age group are complex; thus, whether or not the results of this study are applicable to younger children is uncertain.

Moore and Holmes (1974) examined the effects of individually administered success (i.e., praise), failure (i.e., criticism), and combined success-failure comments on anagram performance as a function of sex and IQ level. Subjects were 72 6th graders divided by sex and IQ level (high or low) randomly assigned to receive either praise (e.g., "You're doing very well," "You're doing better than most."), criticism (e.g., "You are not doing very well," "You are not doing as well as most people who try this."), or success-failure comments. In the latter condition comments of praise and criticism were given alternately.

Subjects were administered four lists of anagrams for five consecutive days. For each list, subjects were given 2 minutes to unscramble as many words as possible. At the conclusion of each 2-minute period the experimenter delivered the appropriate verbal comment.

Following the 5th day of the task subjects were told either that their work was finished but they could try more lists if they liked or that they were required to attempt ten additional lists of anagrams. Data analyzed included the total number of anagrams solved over the 5-day period, the number of lists attempted when the subject could continue or stop, and the number of anagrams solved when ten additional lists were required.

For the number of anagrams solved, effects were found for both sex and IQ variables. Females were found to solve more anagrams than males and high IQ subjects more than low IQ subjects. No main effect for incentive condition was found, but a significant interaction occurred between incentive condition, sex, and IQ. High IQ males in the praise condition were found to solve significantly more anagrams than high IQ males in the failure or success-failure conditions. Low IQ males in the failure condition solved significantly more anagrams than low IQ males in the success or success-failure conditions. Females of either level of IQ were not found to be affected by the incentive conditions.

On the dependent variable of the number of lists attempted voluntarily, only one significant effect was found. Subjects in the success-failure group attempted significantly more anagrams than the failure group. The performance of the praise group was not significantly different from the other two groups. For anagram performance on the ten required additional anagrams, two significant effects were found.

High IQ subjects solved more anagrams than low IQ subjects, and subjects in the failure condition solved more anagrams than subjects in the success condition. The performance of the success-failure group under this condition was not significantly different from the other groups.

It is again found that with subjects of this grade level (5th grade), praise or criticism does not have a simple effect on task performance. In this instance, IQ level was found for males to determine which type of feedback was the most effective in solving anagrams. Females were not found to be affected by praise or criticism, regardless of IQ level. This difference for males and females suggests that males may be more sensitive to evaluative feedback than females.

While the remaining findings are not directly applicable to this present study, they are worthy of note. First, when subjects had the option to perform additional anagram lists, the criticism group performed fewer lists than any other group. That the subjects left the task sooner than the other groups suggests that criticism may have resulted in the task becoming aversive to the subjects. Secondly, if additional performance is required, previous criticism seems to be more effective in maintaining performance behavior than previous praise. This finding is consistent with one obtained in a previous study (Spear and Armstrong, 1978). In this study, subjects who had received criticism had the highest rate of response in the extinction phase of the

task. The effects of praise and criticism on the anagram performance of 5th graders were also examined by Randolph (1971).

In his dissertation, the effects of praise, criticism, and failure on the anagram performance of field-dependent and field-independent individuals were examined. Subjects were 180 5th-grade males found to be either high in field-dependence or field-independence. The problem solving task involved 36 anagrams, divided into two sets of 18 anagrams. Subjects could perform each set of anagrams for a maximum of 8 minutes. When the time period had elapsed for the first set of anagrams and prior to receiving the second set, subjects received either praise, criticism, or were placed in a failure condition. (In the failure condition the subjects were given a list of nine insolvable anagrams.)

Randolph found field-dependent males to perform more effectively after being praised than after being criticized or placed in a failure condition. Praise, criticism, and failure were found to have a greater differential effect on the performance of field-dependent than field-independent subjects. When compared with field-independent subjects, the performance of field-dependent subjects was impaired under both criticism and failure. The performance of field-independent subjects was not impaired under these conditions and in some cases slightly facilitated.

To summarize, these studies (Fish and White, 1978; Moore and Holmes, 1974; and Randolph, 1971) indicate that with 5th graders evaluative feedback does have an effect on the performance of tasks when performance is measured by

speed, accuracy, and/or additional anagram lists attempted voluntarily by the subjects. The impact of evaluative feedback was not found to be a simple one as it was found to interact with subject's interest in the task, the inherent feedback the task provides as well as the subject's IQ level, sex, and cognitive style. These studies used older children and whether these results can be generalizable to younger children is uncertain. The final two studies (McTague, 1972; Sternlicht, Bialer, and Deustch, 1970) to be reviewed would suggest that evaluative feedback does effect the simple motor performance of younger children.

In a dissertation, McTague (1972) examined the effects of reproof (i.e., criticism) on the response rate of preschool children. Two tasks were used. One was a marble-dropping task and the other a marble-sorting task. Subjects were 85 preschool children who performed one of the tasks under either neutral instruction or a criticism condition. Neutral instruction or criticism was given following each of five 2-minute periods allowed for performing their respective task. For the marble-sorting task, it was found that the criticism group made significantly fewer correct responses than the control group. On the marble-dropping task, the response rate of the criticism group was not significantly different from the response rate of the neutral group.

This study found criticism given after task performance had no effect on the subsequent marble dropping performance

of subjects. Performance accuracy for a marble-sorting task was found to be affected by criticism. The study by Stevenson and Snyder (1960) found the marble-dropping performance of the mentally retarded to be affected by criticism. The lack of findings in this study for the marble-dropping task may be due to differences in subject population or to differences in the administration of the evaluative feedback. This study did not examine the relative effects of praise compared with neutral or criticism conditions. The effect of praise was compared to both neutral and criticism conditions in the following study.

Sternlicht, Bialer, and Deustch (1971) examined the amount of time it took subjects to complete a simple ~~recess~~ task after receiving praise, censure (i.e., criticism), or practice (i.e., no verbal comments). Subjects were 180 (90 male and 90 female) residents of a state school for the mentally retarded. Chronological age ranged from 12 to 20 and IQ from 50 to 69. Subjects were given two trials of the Minnesota Rate of Manipulation Test (MRMT). This task required subjects to put 60 wooden cylinders into holes of a board. After the first trial, subjects were given either no verbal feedback (practice), praise, or criticism. In the praise condition, subjects were told they did "very good" and the number of seconds taken to complete the task. In the criticism condition, subjects were told they did "very, very bad" and the number of seconds taken to complete the task.

Praise was found to be no more effective than practice. In contrast, criticism was found to be significantly superior to both praise and practice in decreasing the time period for completing the task.

This discrepant finding for criticism may have occurred for the same reasons that criticism was found to be more effective than praise in the Kelly and Stephen's (1964) study. Briefly, because the feedback contained information concerning the time used to complete the task, subjects were informed that speed of performance was the variable being evaluated. Thus, subjects essentially were given direction how to avoid critical feedback (i.e., increase speed).

In summary of this section, positive or negative evaluative feedback appears to affect subject's subsequent task performance. For older subjects (grade 4 and above), this effect of feedback is complex, as a variety of variables were found to interact with praise and criticism to affect performance. For younger subjects (grade 2 and below), the results are less clear. Kindergarten children were found to be affected by criticism on a marble-sorting task, but not on a simpler marble-dropping task. Another study (Sternlicht et. al., 1971) found the task performance of mentally retarded subjects to increase under criticism but not to be affected by praise.

Summary of Evaluative Feedback

Since this study will utilize young males as subjects, only

the findings for younger children will be summarized. Studies (Stevenson and Snyder, 1960; Stevenson and Cruse, 1961; Hill and Moley, 1969; Spear and Armstrong, 1978) with young children (grade 2 and below) have demonstrated that evaluative feedback given periodically affects task performance. These studies have generally found praise to facilitate and criticism to hinder simple motor performance. The literature concerning the effects of positive or negative evaluative feedback received for task performance on young children's subsequent task performance is limited. One study (Kennedy and Willcutt, 1965) found the performance of 2nd graders on a discrimination task to be facilitated by praise, but to be unaffected by criticism. Another (McTague, 1972) found criticism to inhibit subsequent marble-sorting performance, but not the marble-dropping performance of preschool children. Sternlicht et. al. (1971) found criticism to have a facilitating effect on the subsequent task performance of the mentally retarded. This finding, as noted, may have been due to the nature of the feedback used in the study. It is evident that relatively little research has examined the effects of evaluative feedback on young children's subsequent task performance. The effects of evaluative feedback, as well as adaptive behavior, will be examined in this study.

Statement of Problem

To reiterate, no research has examined whether children possessing differing levels of adaptive behavior respond differently to social or environmental demands. This will be examined in this study, as it will be determined whether

young males of varying levels of adaptive behavior perform significantly different on a simple motor task after receiving evaluative feedback. Because of the differences that exist in the daily behavior of relatively higher adaptive children versus lower adaptive children, a differential response to praise or criticism might be expected.

Children of higher adaptive behavior function more independently in their daily environment than children of lower adaptive behavior. This greater independence of higher adaptive children is reflected in behaviors performed independently in such areas as (1) caring for one's personal hygiene, (2) economic activities (e.g., handling money, making purchases), and (3) domestic activities (e.g., cleaning rooms, fixing snacks). As these children perform more behaviors independent of guidance or supervision by parents, adults, or older peers, it is suggested that these children develop their own standards for performance and evaluate themselves to a greater extent than children of lower adaptive behavior.

In contrast, for low adaptive children, these same behaviors are more likely to be performed by others for the child or occur only with the supervision or guidance of parents, adults, or older peers. The behavior of these children is more dependent upon the comments and direction of others. As a result, children of lower adaptive behavior have fewer opportunities to develop personal standards for performance. Because of this greater reliance of the relatively low adaptive child on significant others, it is

hypothesized that these children are more sensitive to evaluative feedback than children of higher adaptive behavior.

Studies have generally found praise to facilitate and criticism to inhibit the simple motor performance of younger children (grade 2 and below). Further, it is hypothesized that children of lower adaptive behavior are more sensitive to evaluative feedback than higher adaptive children. Thus, the following results are expected to be found:

1. A main effect of evaluative feedback will be found for posttest performance after the effects of pretest performance and adaptive behavior have been removed.
 - (a) Posttest performance of the praise group will be higher than the posttest performance of the criticism group.
 - (b) Posttest performance of the praise and criticism groups combined will be equal to the posttest performance of the control group.
2. Evaluative feedback will be found to affect posttest performance as a function of the subject's level of adaptive behavior after the effects of pretest performance have been removed.
 - (a) Subjects of relatively high adaptive behavior will not be as affected by praise as subjects of lower adaptive behavior; thus under praise, the posttest performance of higher adaptive children will be lower than subjects of lower adaptive behavior.
 - (b) Subjects of relatively high adaptive behavior will not be as affected by criticism as subjects of lower adaptive behavior; thus under criticism, the posttest performance of higher adaptive children will be greater than subjects of lower adaptive behavior.

- (c) No relationship between the adaptive behavior level of the subject and posttest performance will occur in the neutral condition.

CHAPTER III

Method

Subjects

The subjects were sixty male Caucasians, 6.0 to 8.5 years of age, recruited from two elementary schools in Bowling Green and two elementary schools in Franklin, Kentucky. All Caucasian males in the 1st, 2nd, and 3rd grades received a letter (see Appendix A) to be taken home to their parents. This letter briefly explained to the parents the nature and purpose of the study. The student then returned these letters to school with either the parent's (s') written permission or denial for the student to participate in this study.

Materials and Apparatus

The task (see Appendix B) used in this study, henceforth called the "ring task," was a simple motor task requiring discrimination and matching of colors. The apparatus consisted of a 20 by 24 inch, rectangular board with a natural finish, on which were eleven rows of nine headless nails. The first row of nails began two inches from the side and bottom of the board. Nails were placed at two inch intervals. Each row of nails was spaced two inches from its adjacent row(s) of nails. In total, there were 99 headless nails distributed systematically across the board.

Each nail was painted either black, blue, red, yellow, or silver. A small area of the board at the base of each nail was painted the same color as the nail to enhance the distinctiveness of each painted nail. The color that each nail was painted was determined randomly, resulting in the total number of nails of each color varying from 18 to 21. One hundred 3/4 inch washers were also painted one of the five colors (20 per color) previously mentioned and were randomly placed in a bowl that was six inches in diameter.

The Adaptive Behavior Inventory for Children (ABIC) was used to assess each subject's level of adaptive behavior. As previously mentioned, the ABIC contains six subscales. The Average Scale Score obtained from these was the child's general measure of adaptive behavior.

Experimental Conditions

Sixty subjects were randomly assigned to either a praise, criticism, or neutral condition. Thus, each group contained twenty subjects. Subjects in the praise and critical conditions received comments that were evaluative of task performance, while subjects in the neutral condition were asked questions irrelevant to the task.

In the praise condition subjects were told:

Well that's it. (pause) Your score is very good. I knew you would do well, but you did even better than I had expected. I am really pleased. This looks like the best score I have gotten yet. Now, I would like you to do this again.

The subjects in the critical condition were given the following comments:

Well that's it. (pause) Hmm. (pause) Your score is not nearly as good as I thought it would be. I really am disappointed. I think this is the worst score I have gotten yet. But perhaps if we did this again. (pause) I'll tell you what. Let's forget this score and do this again.

The subjects in the neutral condition were asked biographical questions. Questions included: "How many brothers and sisters do you have?;" "How old are you?;" and "What school do you go to?"

Procedure

The study was conducted in the home of the subject. Upon entering the home, the experimenter first asked to see the child in order to administer the task to him. The experimenter and subject then went into a convenient room and sat on the floor. The experimental apparatus was placed between them with the bowl of washers in front of the subject.

The task required the subject to note the color of each nail, obtain the same color washer from the bowl of washers, and place it on the nail. The subject was required to find the appropriate washer for each nail in succession, going from left to right for each row of nails.

The experimenter first demonstrated the task by verbally pointing out that the first nail of the bottom row was blue and that it was necessary to obtain a blue washer from

the bowl to place on the nail. This was done; but for the second nail the experimenter purposefully made a mistake, choosing a wrong color washer from the bowl. This error was pointed out to the subject and placed back into the bowl. The appropriate color washer was then chosen and placed on the nail. The experimenter then asked the subject to place in order the appropriate color washer over the following four nails of the bottom row. When this step was completed, the experimenter then gave the remaining instructions for the task (see Appendix C).

The subject began the task by putting the appropriate color washer on the seventh nail of the bottom row. When this was done, the subject put the appropriate color washer on the nail to the immediate right of the previous one, continuing until the row was completed. The subject then repeated this procedure on the row of nails immediately above, beginning with the left-most nail. Upon completion of this row, subjects moved to the next higher row, again beginning at the extreme left side. The subject followed this procedure for a period of three minutes. After this time period had elapsed, the experimenter paused to scan the board and then gave the respective evaluative comment or asked biographical information of the subject. When this was completed, the experimenter paused and then lifted and flipped over the task board allowing the washers to fall to the floor. The experimenter gathered the washers

and placed them back into the bowl without comment. The subject was then asked if he understood how to do the task. If so, he then repeated the task beginning at the seventh nail of the bottom row. If not, the directions were repeated to the subject before beginning.

After the completion of the second trial on the task, the subject was praised for his performance and debriefed as to the purpose of the experimenter's comments after the first trial. The experimenter then thanked the subject for his cooperation and, if necessary, continued to speak with him.

Subsequently, the mother of the child was interviewed with the ABIC, following the procedures specified in the Parent Interview Manual (Mercer and Lewis, 1977). These procedures require that the interviewer read the questions exactly as printed, not show approval or disapproval for answers, obtain an answer for every question, reach each question with a slight pause between the three possible answers, and not indicate by tone of voice or facial expression how the interviewer expects the respondent to answer.

Design and Analysis

The design consisted of one criterion (dependent) variable, one covariate, and two predictor (independent) variables. The criterion variable was the posttest score (i.e., the score obtained on the first trial of the ring

task); and the predictors were the ABIC and the type of evaluative feedback.

Two different sets of regression analyses were performed using the model depicted in Table 1. The first set was designed to test the hypotheses relating to the predicted main effect of evaluative feedback on posttest performance. The second set was designed to determine the nature of the relationship between posttest performance and adaptive behavior separately for praise, criticism, and control groups with the effects of pretest performance partialled out.

The first analysis was performed in five steps. First, Y was regressed on X1 to determine the amount of variance in the posttest scores due to variance in pretest scores. Second, Y was regressed on X1 and X2 to determine any additional variance of Y accounted for by ABIC scores. Third, Y was regressed on X1, X2, X3, and X4 to determine the additional variance of Y accounted for by the interaction of feedback and ABIC scores. Finally, Y was regressed on the above mentioned vectors and X7, X8, X9, X10, and X11 to determine the additional variance of Y accounted for by the interaction of pretest and the predictors/predictor interactions.

The second analysis was performed in three steps separately within each of the three groups: praise, criticism, and control. First Y was regressed on X1 to determine the amount of variance in the posttest

TABLE 1
 Vectors Used in Regression Analysis

Vector	
Y	Posttest (criterion)
X1	Pretest (Covariate)
X2	ABIC (Average Scale Score on ABIC)
X3	P-C (Praise vs Criticism)
X4	PC-N (Praise, Criticism vs Neutral)
X5	ABIC by PC-N
X6	ABIC by P-C
X7	Pretest by ABIC
X8	Pretest by PC-N
X9	Pretest by P-C
X10	Pretest by PC-N by ABIC
X11	Pretest by P-C by ABIC

ABIC by Feedback

Pretest by Feedback

scores due to variance in pretest scores. Second, Y was regressed on X1 and X2 to determine the additional variance of Y accounted for by ABIC scores. Finally, Y was regressed on X1, X2, and X7 to determine the additional variance of Y accounted for by the interaction of pretest and ABIC scores.

CHAPTER IV

Results

For the reader's convenience the mean and standard deviation of pretest scores, posttest scores, and ABIC Average Scale Scores for each feedback condition (see Appendix D for raw scores of each subject as a function of feedback) are presented in Table 2. The means and standard deviations of the pretest scores across the three feedback conditions were similar indicating that the groups were equivalent initially. The similarity of the means and standard deviations of the posttest scores across the three groups indicate the groups was also equivalent upon finishing the second trial of the task. The similarity of the means and standard deviations for the ABIC Average Scale Scores across the three groups indicate the groups were equivalent for adaptive behavior. Thus, for the three feedback conditions, the groups were equivalent for pretest and posttest performance as well as adaptive behavior.

For the total sample an ABIC Average Scale Score mean of 51.3 with a standard deviation of 13.4 was found, corresponding very closely to the Average Scale Score mean of 49.9 and standard deviation of 13.2 reported by Mercer (1979) for the total White standardization sample.

TABLE 2

Means and Standard Deviations of Pretest Scores,
Posttest Scores, and ABIC Average Scale Scores
as a Function of Feedback

	Group								
	Neutral			Criticism			Praise		
	Pre	Post	ABIC	Pre	Post	ABIC	Pre	Post	ABIC
Mean	49.9	52.7	50.9	43.4	49.7	51.4	48.8	53.0	51.5
Standard Deviation	9.8	10.8	13.5	9.2	14.2	14.3	7.9	9.1	13.1

Results of the first regression analysis are presented in Table 3. Pretest scores were found to predict a significant amount of the variance (72.9%) in posttest scores ($p < .05$). The additional variance in posttest scores due to ABIC scores (.4%), type of feedback (1.9%) and the interaction of ABIC and feedback (.5%) was not significant. The interaction of pretest and predictors/predictor interactions was significant, but accounted for a trivial (6.2%) and inexplicable amount of variance in posttest scores. The only reliable determinant of posttest performance was pretest performance. Neither ABIC score, feedback, nor the interaction thereof had any reliable effect on posttest performance. Furthermore, the partitioning of the sum of squares due to evaluative feedback into orthogonal contrasts (P vs C and PC vs N) resulted in neither comparison reaching significance. The lack of any observable effect of evaluative feedback on posttest performance does not support the author's hypotheses that (1) praise would result in higher performance than criticism and (2) praise and criticism groups combined would perform at the same level as the control (neutral) group.

Results of the second regression analysis are presented in Table 4(a), 4(b), and 4(c) for praise, criticism, and neutral groups, respectively. In all these groups pretest performance accounted for a significant amount of variance in posttest scores (praise, 61.4%; criticism, 81.3%; neutral, 81.5%). The additional variance in posttest scores due to ABIC was significant for the praise group (14.6%), but not

TABLE 3
Results of Multiple Regression Analysis

<u>Source</u>	<u>Squared Multiple Correlation</u>	<u>Difference</u>	<u>Partial F</u>	<u>Mean Square Error</u>	<u>P</u>
Pretest	.729		156.7	36.14	<.05
ABIC	.733	.004	.25	36.35	>.05
Feedback	.752	.019	2.11	35.00	>.05
P vs C			3.64	35.00	>.05
PC vs N			.58	35.00	>.05
ABIC by Feedback	.757	.005	.543	35.54	>.05
Pretest by Predictor/ Predictor Interactions	.819	.062	3.35	29.22	<.05

TABLE 4(a)
Regression Analysis for Praise

<u>Source</u>	<u>Squared Multiple Correlation</u>	<u>Difference</u>	<u>Partial F</u>	<u>Mean Square Error</u>	<u>F</u>
Pretest	.614		28.63	33.67	<.05
ABIC	.760	.146	10.29	22.20	<.05
Pretest by ABIC	.780	.020	1.46	21.62	>.05

TABLE 4(b)
Regression Analysis for Criticism

<u>Source</u>	<u>Squared Multiple Correlation</u>	<u>Difference</u>	<u>Partial F</u>	<u>Mean Square Error</u>	<u>F</u>
Pretest	.813		78.30	39.90	<.05
ABIC	.818	.005	.57	41.11	>.05
Pretest by ABIC	.820	.002	.19	43.16	>.05

TABLE 4(c)
Regression Analysis for Neutral

<u>Source</u>	<u>Squared Multiple Correlation</u>	<u>Difference</u>	<u>Partial F</u>	<u>Mean Square Error</u>	<u>F</u>
Pretest	.815		79.40	22.73	<.05
ABIC	.819	.004	.34	23.60	>.05
Pretest by ABIC	.835	.016	1.54	22.87	>.05

for either criticism (.5%) or neutral (.4%) groups. Furthermore, none of the pretest by ABIC interactions reached significance each accounting for only a trivial amount of variance in posttest scores (praise, 2.0%; criticism, .2%; neutral, 1.6%).

Of the three hypotheses concerning the relationship between posttest performance and adaptive behavior with the effects of pretest performance taken into account, only the hypothesis of no correlation in the neutral group was supported. The expected positive correlation in the criticism condition did not materialize; not only did the expected negative correlation in the praise group not appear but a significant positive relationship emerged as well (as evidenced by a weighting coefficient of .3556).

CHAPTER V

Discussion

The similarity between the mean and standard deviation of the ABIC Average Scale Score obtained in this study and that reported by Mercer (1979) for her standardization sample is important for two reasons. First, it demonstrates the applicability of the ABIC to young children from southern Kentucky. Secondly, it suggests that the sample obtained in this study is representative of the general population, allowing greater confidence in the generalization of the findings in this study to the general population.

No support was found for the hypotheses that (1) praise would result in higher performance than criticism and (2) the praise and criticism groups combined would perform at the same level as the control (neutral) group. The lack of effect for praise or criticism was unexpected in view of the research evidence concerning the effects of praise and criticism on young children's (grade 2 and below) task performance. Generally, evaluative feedback has been found to have a strong and consistent impact on performance with praise facilitating (Stevenson and Cruse, 1961; Willcutt and Kennedy, 1965; Hill and Moley, 1969) and criticism inhibiting (Stevenson and Cruse, 1961; McTague, 1971; Spear and Armstrong, 1978) task performance. The lack of an effect for evaluative

feedback in this study is likely due to feedback being given on only one occasion. In contrast to this study, most studies (Stevenson and Cruse, 1961; Hill and Moley, 1969; McTague, 1971; Spear and Armstrong, 1978) have delivered evaluative feedback frequently to the subjects. It would be expected that the effect of frequent feedback would be to enhance the impact of praise and criticism over time. This effect was reported in one study (Hill and Moley, 1969) which found task performance to increase over succeeding minutes with repeated praise. Only one study (Willcutt and Kennedy, 1965) has examined the effects of evaluative feedback given on only one occasion on the subsequent task performance of young children. This study found praise to decrease reaction time on a discrimination task, but no effect was found for criticism. To the knowledge of this author the effect of evaluative feedback given once, on simple motor performance, had not been examined previous to this study. Thus, the lack of simple main effects for praise and criticism in this study indicate that young children as a group are not sensitive to evaluative feedback given once for task performance. Nevertheless, when the adaptive behavior of the subject was taken into account, an effect for evaluative feedback was found.

It was hypothesized that children of higher adaptive behavior would be less sensitive to evaluative feedback than children of lower adaptive behavior. Thus, a negative correlation between adaptive behavior and posttest performance

under praise, a positive correlation between adaptive behavior and posttest performance under criticism, and no correlation between adaptive behavior and posttest performance under the neutral condition were expected to be found. The only expected effect found was one of no correlation between adaptive behavior and posttest performance under a neutral condition. One finding was obtained that was contrary to the expected. A significant positive correlation between adaptive behavior and posttest performance was obtained under praise.

In view of this finding an alternative hypothesis is suggested. It is hypothesized that as children grow older adaptive behavior may be associated with less sensitivity to evaluative feedback (because of increased dependence upon themselves, past experiences, etc.), but for younger children this is not true. Rather for younger children, adaptive behavior may be related to a higher responsiveness to feedback and cues in the environment as to appropriate behavior.

Young children have a great deal to learn about effectively coping with the demands of the environment (e.g., handling money, caring for one's personal needs, learning to interact with others). The most adaptive children would be those who respond effectively to feedback concerning these and other behaviors. A higher sensitivity to feedback and/or environmental cues would allow these children to more readily change behavior and adapt to any given situation. The more highly adaptive child in this study

may have found praise to verify the correctness of the task performance, leading to subsequent increased performance. Thus, the positive relationship of adaptive behavior and posttest performance under praise is a result of higher responsiveness to praise for children of higher adaptive behavior.

The lack of a relationship between adaptive behavior and posttest performance under criticism may be due to the vagueness of the feedback. Under praise, the appropriateness of task performance was verified by feedback. Under criticism, no direction was given as to why performance was poor or how it could be corrected. Whether the lack of useful information in the critical feedback condition explains the finding of no relationship between adaptive behavior and posttest performance under criticism, awaits further research.

It is evident that a great deal of research is needed to examine the effects of both evaluative feedback and adaptive behavior. Further research using evaluative feedback with young children might examine (1) the effects of evaluative feedback given once on subsequent performance for a variety of tasks including learning, discrimination, skill motor, etc., (2) the use of different types of feedback (e.g., simple statements of praise or criticism versus praise and criticism that contains information as to what is correct or incorrect about performance), and (3) the relationship of adaptive behavior to the above variables.

This study demonstrates the feasibility of exploring adaptive behavior by determining whether adaptive behavior successfully predicts differences in behavior in situations where differences might be expected. Much research of this nature is still needed to examine the concept of adaptive behavior and the instruments designed to measure it. If adaptive behavior is found to successfully predict differences in the behavior of subjects where expected, indications are that these adaptive behavior instruments are providing a measure of adaptive behavior and not just a measure of the discrete behaviors examined on any individual scale. Such research would lend support for the construct validity of the instruments and increase our confidence in the use of these instruments.

To summarize, this study examined the effect of evaluative feedback on the task performance of young males when the adaptive behavior level of the subject was taken into account. No main effect for evaluative feedback was found, nor was adaptive behavior found to predict posttest performance when subjects received critical or neutral feedback. A significant positive correlation between adaptive behavior and posttest performance was obtained when subjects received praise.

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APPENDICES

Appendix A

Recruitment Letter Sent Home to Parents from School
WESTERN KENTUCKY UNIVERSITY

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BOWLING GREEN, KENTUCKY 42101

Department of Psychology

January, 1981

To Mrs.

My name is Mike Reed and I'm a graduate student at Western Kentucky University. I am presently doing a research project using first, second, and third grade males. I am asking you to volunteer your help in this.

I would like to come into your home at your convenience, and ask some questions about your son. These questions will ask such things as how he gets along with friends, if he is able to handle money correctly, can he tell time, what kinds of things can he do for himself and for what things does he need help from you. After this interview I can give you information as to how he compares with other children of his age in doing these things.

I would also like to give your son a short task which all children will be able to perform correctly. I will be looking to see how he does the task after he has been criticized or praised. The time I spend with your son will be less than ten minutes and the interview with you will be less than one hour.

This project is not in any way connected with the school. This letter is being sent from the school with the permission of the principal. No one else will see your son's results unless you release this information.

If you agree to do this, I will call you within the next two weeks to set up a time. Please check one of the boxes below and have your son return this letter to school.

- ☐ Yes, I agree to do this
- ☐ No, I do not wish to do this
- ☐ Unsure, would like more information about it.

Signature of Parent

Child's Name

Phone No.

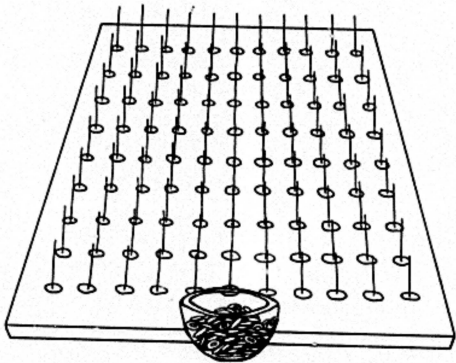
Birth Date

Thank you very much for your time and cooperation.

Sincerely,

Mike Reed

Appendix B
Illustration of Task



Appendix C
Introductory Remarks and Directions
for Task Performance

Hello (name). I want you to play this game for me. See this board? On this board are nails of different colors. Some nails are blue, others red, some are black, some are silver, and some are yellow. Now look down here at these washers (experimenter points to bowl of washers). These also are different colors. Some are blue, some red, some black, some silver, and some yellow. They're the same colors as the nails. What I want you to do is to pick one washer from the bowl at a time that is the same color as the nail and place the washer on the nail. O.K. ... First, watch me (experimenter demonstrates slowly). The first nail is blue so I must find the same color washer (experimenter finds an appropriate washer from the bowl and places it on nail). You see, the washer is the same color as the nail. The next nail is yellow so I need to find a yellow washer (the experimenter chooses a wrong color washer from the bowl and almost places it upon the nail). Oops. this is not the same color as the nail so I cannot put this here (the experimenter returns the wrong washer to the bowl and chooses correct one to place on nail). See, this washer is the same color as the nail.

Now, I want you to do the next four and then stop. (The experimenter says nothing unless the subject makes a mistake. In this case the experimenter repeats the directions beginning

with, "What I want you"). After the sample four, the experimenter then says, "When I say 'Start,' I want you to do each one. Start here (experimenter points) and do all of this row. When you finish (experimenter points), go to the next row. Pick up only one washer at a time, and don't skip any. Ready? Start." (If subject skips a nail, the experimenter points it out and reminds the subject not to skip any.)

Appendix D

Raw Score for Posttest, Pretest, and ABIC
Average Scale Score as a Function of Feedback
for Each Subject

Subject	Praise			Neutral			Criticism		
	Pre	Post	ABIC	Pre	Post	ABIC	Pre	Post	ABIC
1	37	31	23.6	48	44	26.6	38	48	12.7
2	36	39	29.7	34	37	28.3	33	27	37.5
3	49	44	32.1	47	48	28.8	50	53	37.5
4	32	40	38.3	35	31	32.5	41	48	39.8
5	53	53	42.0	43	54	44.7	45	63	40.3
6	46	52	43.0	62	67	45.0	25	25	43.2
7	58	56	47.7	66	68	45.7	35	31	45.0
8	40	55	47.8	50	52	46.8	43	51	49.2
9	45	45	52.0	49	59	47.2	56	62	51.3
10	49	60	54.5	53	62	51.7	51	60	51.6
11	54	60	55.3	62	68	56.3	49	64	54.2
12	52	60	56.5	42	38	58.6	46	54	54.8
13	55	60	57.3	44	48	58.7	55	64	56.3
14	43	54	61.2	51	53	60.7	51	67	57.0
15	51	53	61.7	68	66	61.2	39	52	58.5
16	49	59	63.3	44	47	62.1	51	52	63.3
17	58	63	65.0	38	44	64.0	40	50	63.7
18	53	53	65.0	49	57	64.0	24	16	66.5
19	60	68	65.5	53	51	64.8	54	56	69.5
20	57	55	69.0	60	60	70.3	43	51	77.2
Totals	977	1,060	1030.5	998	1,054	1018.0	869	994	1029.1